

CASE STUDY:

Total Protection for Norway's Valuable Artifacts



Protecting Valuable Artifacts in Oslo

Johnson Controls has showcased its SAPPHIRE™ fire protection range with the completion of three installations in Oslo, at the National Library of Norway, The National Gallery, and The Munch Museum.

Providing total fire suppression and protection, the SAPPHIRE system ensures Norway's most treasured and artistic and literary heritage remains safe from the devastating risk of fire. Each of the internationally renowned venues house irreplaceable artefacts relating to Norway's culture. The National Gallery in particular contains in the region of 22,000 drawings and paintings, as well as countless sculptures, casts and prints which date as far back as the Middle Ages.

When looking to protect such valuable works of art, a fire suppression solution capable of providing complete protection without the risk of damage to the building's contents is key. Stringent criteria relating to the speed of extinguishant deployment, selection of appropriate agent and characteristics regarding discharge safety in occupied areas must all be considered. The SAPPHIRE system offers absolute confidence in meeting these key requirements and these were major factors, alongside its sustainability and environmental credentials, in the system being specified for the three projects in Norway.

In each project the SAPPHIRE system was installed using 3M™ Novec™ 1230 Fire Protection Fluid, a colourless and odourless extinguishant which behaves like water but evaporates on contact, leaving no residue or dampness. This ensured complete protection for the fragile artefacts within the museums and gallery which may otherwise have been destroyed or severely damaged by traditional water sprinkler systems. The installations have an installed footprint similar to that of other chemical clean agent systems. Most importantly, the Novec 1230 fluid has the lowest design concentration and highest safety margin of any viable Halon 1301 chemical alternative.

Customer:
**National Library of Norway,
The National Gallery,
The Munch Museum**

Region:
Oslo, Norway

Product Solutions:
**SAPPHIRE™ Fire Suppression
System delivering 3M™ Novec™
1230 Fire Protection Fluid**

"The SAPPHIRE system is ideally suited to occupied spaces and buildings that contain valuable or irreplaceable contents."

Alan Elder,
Fellow Engineered Systems,
Johnson Controls

Minimal impact on the environment

The SAPPHIRE™ system has a minimal impact on the environment, ensuring the system meets the stringent environmental standards. In comparison to other halocarbon agents, it delivers a significant reduction in global warming potential and typical total flooding applications use a low concentration of the agent that is well below saturation or condensation level.

3M™ Novec™ 1230 Fire Protection Fluid has the lowest design concentration and highest safety margin of any viable Halon 1301 chemical alternative.

Alan Elder, Fellow of Engineered Systems at Johnson Controls comments "The SAPPHIRE system is ideally suited to occupied spaces and buildings that contain valuable or irreplaceable contents. As an engineered system we advocate early involvement to ensure an appropriate solution is designed to meet the needs of each specific application. The benefits of the system in terms of speed of suppression, health and safety, sustainability and object protection are clear and we're very pleased to provide a total fire protection solution for three renowned buildings for Norway's art and culture."



Johnson Controls is a global diversified technology and multi industrial leader serving a wide range of customers in more than 150 countries. Our 117,000 employees create intelligent buildings, efficient energy solutions, integrated infrastructure and next generation transportation systems that work seamlessly together to deliver on the promise of smart cities and communities.

Our commitment to sustainability dates back to our roots in 1885, with the invention of the first electric room thermostat. We are committed to helping our customers win and creating greater value for all of our stakeholders through strategic focus on our buildings and energy growth platforms.

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